

Appl. No. 10/750,355
Amdt. dated February 21, 2006
Reply to Office Action of October 19, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

Claims 1-84 (Canceled)

Claim 85 (Previously presented): The electronic interconnect element of claim 102, wherein the first leaf portion comprises a structural material deposited on a conductive seed material.

Claims 86-101 (Canceled)

Claim 102 (Currently amended): An electronic interconnect element comprising:

a first leaf portion;

a contact tip located on a first side of the first leaf portion and disposed to engage a contact feature of an electronic device;

at least one first support coupled to an opposite side of the first leaf portion offset from the contact tip;

a second leaf portion having a first side coupled to the at least one first support, wherein the first support joins the first leaf portion to the second leaf portion such that the first side of the first leaf portion, the opposite side of the first leaf portion, the first side of the second leaf portion, and ~~[[the]]~~ an opposite side of the second leaf portion are substantially parallel; and

at least one second support coupled to ~~[[an]]~~ the opposite side of the second leaf portion offset from the at least one first support point.

Claim 103 (Withdrawn): The electronic interconnect element of claim 102, wherein the contact tip and the second support are located on a common axis that is substantially perpendicular to the first side of the first leaf portion, the opposite side of the first leaf portion, and the first side of the second leaf portion.

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Claim 104 (Previously presented): The electronic interconnect element of claim 102 further comprising a third support spaced apart from the first support and coupled to the opposite side of the first leaf portion offset from the contact tip, and a fourth support spaced apart from the second support and coupled to the opposite side of the second leaf portion offset from the first contact.

Claim 105 (Previously presented): The electronic interconnect element of claim 102 further comprising a third leaf portion having a first side coupled to the second support, and a third support coupled to an opposite side of the third leaf portion offset from the second support.

Claim 106 (Previously presented): The electronic interconnect element of claim 102 wherein the contact tip, the first and second leaf portions and the first and second support are each structurally distinct and separate elements that are joined one to another.

Claim 107 (Currently amended): An electronic interconnect element comprising:

a plurality of leaf portions;

a contact tip located on a first side of one of the plurality of leaf portions and disposed to engage a contact feature of an electronic device;

at least one first support coupled to an opposite side of the one leaf portion offset from the contact tip;

another of the plurality of leaf portions having a first side coupled to the at least one first support, wherein the first support joins the one leaf portion to the another leaf portion such that the first side of the one leaf portion, the opposite side of the one leaf portion, the first side of the another leaf portion, and ~~[[the]]~~ an opposite side of the another leaf portion are substantially parallel; and

at least one second support coupled to ~~[[an]]~~ the opposite side of the other leaf portion offset from the at least one first support.

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Claim 108 (Currently amended): An electronic interconnect element comprising:

a plurality of leaf structures are disposed in a stack and joined one to another by at least one support structure;

a post structure attached to a first outer one of said leaf structures and configured to attach said electronic interconnect element to a first electronic component; and

a contact tip structure attached to a second outer one of said leaf structures and configured to contact a second electronic component,

wherein each of said leaf structures is configured to flex in response to a force on said contact tip structure from contact with said second electronic component.

Claim 109 (Previously presented): The electronic interconnect element of claim 108, wherein said leaf structures are disposed substantially parallel in said stack.

Claim 110 (Currently amended): The electronic interconnect element of claim 108, wherein each of said plurality of leaf structures is movable in response to a force applied to said contact tip structure and said interconnection interconnect element acts as a spring when [[a]] said force is applied to said contact tip structure.

Claim 111 (Currently amended): The electronic interconnect element of claim 110, wherein a spring constant of said ~~interconnection~~ interconnect element comprises a sum of spring constants of each of said leaf structures.

Claim 112 (Currently amended): The electronic interconnect element of claim 111, wherein a maximum deflection of said ~~interconnection~~ interconnect element comprises a sum of maximum deflections of each of said leaf structures.

Claim 113 (Currently amended): The electronic interconnect element of claim 110, wherein a maximum deflection of said ~~interconnection~~ interconnect element comprises a sum of maximum deflections of each of said leaf structures.

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Claim 114 (Previously presented): The electronic interconnect element of claim 108, wherein upon application of a force to said contact tip structure, each one of said leaf structures deforms towards another of said leaf structures.

Claim 115 (Previously presented): The electronic interconnect element of claim 108, wherein upon application of a force to said contact tip structure, the leaf structures in at least one pair of adjacent leaf structures deform towards each other.

Claim 116 (Previously presented): The electronic interconnect element of claim 108, wherein upon application of a force to said contact tip structure, the leaf structures in at least one pair of adjacent leaf structures deform in opposite directions.

Claim 117 (Previously presented): The electronic interconnect element of claim 108, wherein each of said leaf structures are cylindrically shaped and stacked to form a cylindrically shaped stack.

Claim 118 (Previously presented): The electronic interconnect element of claim 108, wherein each of said leaf structures are "H" shaped and stacked to form an "H" shaped stack.

Claim 119 (Previously presented): The electronic interconnect element of claim 108, wherein each of said leaf structures are rectangular shaped and stacked to form a rectangular shaped stack.

Claim 120 (Previously presented): The electronic interconnect element of claim 108, wherein at least one of said leaf structures comprises an opening.

Claim 121 (Previously presented): The electronic interconnect element of claim 108, wherein all of said leaf structures except said first outer leaf structure and said second outer leaf structure are disposed between said first outer leaf structure and said second outer leaf structure.

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Claim 122 (Previously presented): The electronic interconnect element of claim 121, wherein each of said leaf structures comprises a plate with a planar surface, and each of said contact tip structure, said at least one support structure, and said post structure are attached to at least one of said planar surfaces.

Claim 123 (Previously presented): The electronic interconnect element of claim 122, wherein said planar surfaces of said leaf structures are substantially parallel in said stack.

Claim 124 (Previously presented): The electronic interconnect element of claim 108 wherein each of said leaf structures, each of said at least one support structures, said post structure, and said contact tip structure are distinct and separate structures that are joined one to another.

Claim 125 (New): The electronic interconnect element of claim 102, wherein each of the first leaf portion and the second leaf portion is configured to flex in response to a force on the contact tip from contact with the electronic device.

Claim 126 (New): The electronic interconnect element of claim 125, wherein each of the first leaf portion and the second leaf portion is resilient and configured to generate a counter force in response to the force on the contact tip.

Claim 127 (New): The electronic interconnect element of claim 107, wherein each of the plurality of leaf portions is configured to flex in response to a force on the contact tip from contact with the electronic device.

Claim 128 (New): The electronic interconnect element of claim 127, wherein each of the plurality of leaf portions is resilient and configured to generate a counter force in response to the force on the contact tip.

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Claim 129 (New): An electronic interconnect element comprising:

a beam structure comprising a closed first end and a closed second end and a hollow space between said closed first end and said closed second end;
a contact tip structure joined to said beam structure; and
an attachment structure configured to attach said interconnect element to an electronic component.

Claim 130 (New): The electronic interconnect element of claim 129, wherein said beam structure comprises a pair of leaf portions joined one to another at ends of said leaf portions.

Claim 131 (New): The electronic interconnect element of claim 130, wherein said pair of leaf portions are joined one to another at said ends of said leaf portions by support structures.

Claim 132 (New): The electronic interconnect element of claim 129 further comprising a beam to which said beam structure is joined by a support structure.

Claim 133 (New): The electronic interconnect element of claim 132 further comprising a plurality of beams, wherein said beam structure is joined to at least one of said beams by at least one support structure.

Claim 134 (New): The electronic interconnect element of claim 129 further comprising another beam structure comprising closed ends and a hollow space between said closed ends, wherein said beam structure and said another beam structure are joined one to another by a support structure.

Claim 135 (New and withdrawn): The electronic interconnect element of claim 129, wherein said beam structure is joined to said attachment structure.